

Fall 2005 Math 151

Week in Review 4 - Solutions

1. a.) $\frac{3}{5}$, b.) 36, c.) $\frac{1}{4}$
2. a.) $f'(x) = \frac{1}{1 + \cos x}$
 b.) $f'(x) = \sec x \tan x - 5 \sec^2 x$
3. 8
4. Prove this using the quotient rule.
5. $y - 1 = 3\sqrt{3}(x - \frac{\pi}{3})$
6. 28
7. $F'(2) = 128, G'(2) = 8$
8. a.) $2 \cos(2t - 1)$
 b.) $\cos(\sqrt{x}) - \frac{\sqrt{x} \sin \sqrt{x}}{2}$
 c.) $-24x(4 - 3x^2)^3$
 d.) $\frac{-3x^2}{(x^3 + 5)^{3/2}}$
 e.) $32x^3(\tan(4x^4 - 5) \sec^2(4x^4 - 5))$
 f.) $3 \sin^2 x \cos x + 3x^2 \cos x^3$
9. $G'(t) = 3(t + f(\tan 2t))^2(1 + 2 \sec^2 2t f'(\tan 2t))$
10. $\frac{8xy^2 - 4x^3}{3y^2 - 8x^2y}$
11. $\frac{-2 \sin 2x - \cos(x + y)}{\cos(x + y)}$
12. $y = -x + 2$
13. Intersect at (1,1), $m_1 = -2, m_2 = \frac{1}{2}$
 which are negative reciprocals
 Intersect at (1,-1), $m_1 = 2, m_2 = -\frac{1}{2}$
 which are negative reciprocals